

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1-6. (canceled).

7. (currently amended): A method for detecting unstable clock-domain crossings in a design of an integrated circuit (IC), comprising:

determining clock-domain crossings in the design;

making a stability determination for a clock-domain crossing lacking a structural synchronization cell determined in the design~~The method of claim 1,~~

wherein the stability determination is made based on satisfaction of a stability function.

8. (original): The method of claim 7, wherein the stability function determines whether a first register and a second register change data simultaneously.

9. (original): The method of claim 8, wherein the stability function is dissatisfied when the first register and the second register change data simultaneously.

10. (currently amended): The method of claim 9, wherein the first register belongs to a first clock domain and the second register belongs to a second clock domain, and the first clock-domain and the second clock domains-domain are part of the determined clock-domain crossing.

11. (currently amended): The method of claim 47, wherein the stability determination is performed using at least one of model checking and bounded model checking (BMC).

12-21. (canceled).

22. (currently amended): A computer program product, including a computer readable medium with computer instructions, for use by a computer to perform operations for detecting unstable clock-domain crossings in a design of an integrated circuit (IC), the operations comprising:

determining clock-domain crossings in the design;

making a stability determination for a clock-domain crossing lacking a structural synchronization cell determined in the design. ~~The computer program product of claim 16,~~

wherein the stability determination is made based on satisfaction of a stability function.

23. (original): The computer program product of claim 22, wherein the stability function determines whether a first register and a second register change data simultaneously.

24. (original): The computer program product of claim 23, wherein the stability function is dissatisfied when the first register and the second register change data simultaneously.

25. (currently amended): The computer program product of claim 24, wherein the first register belongs to a first clock domain and the second register belongs to a second clock domain, and the first clock-domain and the second clock domains-domain are part of the determined clock-domain crossing.

26. (currently amended): The computer program product of claim ~~16~~22, wherein the stability determination is performed using at least one of model checking and bounded model checking (BMC).

27-36. (canceled).

37. (currently amended): A computer system, adapted to implement a method for detecting unstable clock-domain crossings in a design of an integrated circuit (IC), comprising:

a processor; and,

a memory including software instructions adapted to enable the computer system to perform the operations of:

determining clock-domain crossings in the design;

making a stability determination for the clock-domain crossing lacking a structural synchronization cell determined in the design, and

~~The computer system of claim 31,~~ wherein the stability determination is made based on satisfaction of a stability function.

38. (original): The computer system of claim 37, wherein the stability function determines whether a first register and a second register change data simultaneously.

39. (original): The computer system of claim 38, wherein the stability function is dissatisfied when the first register and the second register change data simultaneously.

40. (currently amended): The computer system of claim 39, wherein the first register belongs to a first clock domain and the second register belongs to a second clock domain, and the first clock-domain and the second clock ~~domains~~ domain are part of the determined clock-domain crossing.

41. (currently amended): The computer system of claim 3734, wherein the stability determination is performed using at least one of model checking and bounded model checking (BMC).

42-45. (canceled).